

We Claim:

1. A method of detecting the presence of a target BS106 polynucleotide  
5 in a test sample, comprising:  
    (a) contacting said test sample with at least one BS106-specific  
polynucleotide or complement thereof; and  
    (b) detecting the presence of said target BS106 polynucleotide in the test  
sample, wherein said BS106-specific polynucleotide has at least 50% identity to a  
10 polynucleotide selected from the group consisting of SEQUENCE ID NO 1,  
SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE  
ID NO 5, and fragments or complements thereof.
2. The method of claim 1, wherein said target BS106 polynucleotide is  
15 attached to a solid phase prior to performing step (a).
3. A method for detecting mRNA of BS106 in a test sample,  
comprising:  
    (a) performing reverse transcription with at least one primer in order to  
20 produce cDNA;  
    (b) amplifying the cDNA obtained from step (a) using BS106  
oligonucleotides as sense and antisense primers to obtain BS106 amplicon; and  
    (c) detecting the presence of said BS106 amplicon in the test sample,  
wherein the BS106 oligonucleotides utilized in steps (a) and (b) have at least 50%  
25 identity to a sequence selected from the group consisting of SEQUENCE ID NO 1,  
SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE  
ID NO 5, and fragments or complements thereof.
4. The method of claim 3, wherein said test sample is reacted with a  
30 solid phase prior to performing one of steps (a), (b), or (c).
5. The method of claim 3, wherein said detection step comprises  
utilizing a detectable label capable of generating a measurable signal.

6. A method of detecting a target BS106 polynucleotide in a test sample suspected of containing said target, comprising:

(a) contacting said test sample with at least one BS106 oligonucleotide as a sense primer and with at least one BS106 oligonucleotide as an anti-sense primer and amplifying to obtain a first stage reaction product;

(b) contacting said first stage reaction product with at least one other BS106 oligonucleotide to obtain a second stage reaction product, with the proviso that the other BS106 oligonucleotide is located 3' to the BS106 oligonucleotides utilized in step (a) and is complementary to said first stage reaction product; and

(c) detecting said second stage reaction product as an indication of the presence of the target BS106 polynucleotide, wherein the BS106 oligonucleotides utilized in steps (a) and (b) have at least 50% identity to a sequence selected from the group consisting of SEQUENCE ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE ID NO 5, and fragments or complements thereof.

7. The method of claim 6, wherein said test sample is reacted with a solid phase prior to performing one of steps (a), (b), or (c).

8. The method of claim 6, wherein said detection step comprises utilizing a detectable label capable of generating a measurable signal.

9. The method of claim 8, wherein said detectable label is reacted to a solid phase.

10. A test kit useful for detecting BS106 polynucleotide in a test sample, comprising a container containing at least one BS106 polynucleotide having at least 50% identity to a sequence selected from the group consisting of SEQUENCE ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE ID NO 5, and fragments or complements thereof.

11. A purified polynucleotide or fragment thereof derived from a BS106 gene, wherein said polynucleotide is capable of selectively hybridizing to the nucleic acid of said BS106 gene and has at least 50% identity to a sequence selected from the group consisting of SEQUENCE ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID

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*SW*  
*AK*  
NO 3, SEQUENCE ID NO 4, SEQUENCE ID NO 5, and fragments or  
complements thereof.

12. The purified polynucleotide of claim 11, wherein said polynucleotide  
5 is produced by recombinant techniques.

13. The purified polynucleotide of claim 11, wherein said polynucleotide  
is produced by synthetic techniques.

10 14. The purified polynucleotide of claim 11, wherein said polynucleotide  
comprises a sequence encoding at least one BS106 epitope.

*SW*  
*AK*  
15 15. A recombinant expression system comprising a nucleic acid sequence  
that includes an open reading frame derived from BS106 operably linked to a control  
sequence compatible with a desired host, wherein said nucleic acid sequence has at  
least 50% identity to a sequence selected from the group consisting of SEQUENCE  
ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4,  
SEQUENCE ID NO 5, and fragments or complements thereof.

20 16. A cell transfected with the recombinant expression system of claim  
15.

25 17. A BS106 polypeptide having at least 50% identity with an amino acid  
sequence selected from the group consisting of SEQUENCE ID NO 16,  
SEQUENCE ID NO 17, SEQUENCE ID NO 18, SEQUENCE ID NO 19,  
SEQUENCE ID NO 20, and fragments of SEQUENCE ID NOS 17-20.

30 18. The polypeptide of claim 17, wherein said polypeptide is produced  
by recombinant techniques.

19. The polypeptide of claim 17, wherein said polypeptide is produced  
by synthetic techniques.

35 20. An antibody which specifically binds to at least one BS106 epitope,  
wherein said BS106 epitope is derived from an amino acid sequence having at least

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50% identity to an amino acid sequence selected from the group consisting of  
SEQUENCE ID NO 16, SEQUENCE ID NO 17, SEQUENCE ID NO 18,  
SEQUENCE ID NO 19, SEQUENCE ID NO 20, and fragments thereof.

5           21.     An assay kit for determining the presence of BS106 antigen or anti-  
BS106 antibody in a test sample, comprising a container containing a BS106  
polypeptide having at least 50% identity with an amino acid sequence selected from  
the group consisting of SEQUENCE ID NO 16, SEQUENCE ID NO 17,  
SEQUENCE ID NO 18, SEQUENCE ID NO 19, SEQUENCE ID NO 20, and  
10   fragments thereof.

          22.     The assay kit of claim 21, wherein said polypeptide is attached to a  
solid phase.

15           23.     An assay kit for determining the presence of BS106 antigen in a test  
sample, comprising a container containing an antibody which specifically binds to a  
BS106 antigen which comprises at least one BS106 epitope.

          24.     The kit of claim 23, wherein said antibody is attached to a solid  
20   phase.

          25.     A method for producing a polypeptide comprising at least one BS106  
epitope, said method comprising incubating host cells that have been transfected with  
an expression vector containing a polynucleotide sequence encoding a polypeptide,  
25   wherein said polypeptide comprises an amino acid sequence having at least 50%  
identity to an amino acid sequence selected from the group consisting of  
SEQUENCE ID NO 16, SEQUENCE ID NO 17, SEQUENCE ID NO 18,  
SEQUENCE ID NO 19, SEQUENCE ID NO 20, and fragments thereof.

30           26.     A method for detecting BS106 antigen in a test sample suspected of  
containing said BS106 antigen, comprising:

          (a)     contacting the test sample with an antibody or fragment thereof which  
specifically binds to at least one epitope of a BS106 antigen selected from the group  
consisting of SEQUENCE ID NO 16, SEQUENCE ID NO 17, SEQUENCE ID NO  
35   18, SEQUENCE ID NO 19, SEQUENCE ID NO 20, and fragments thereof,

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wherein said contacting is carried out for a time and under conditions sufficient for the formation of antibody/antigen complexes; and

(b) detecting the presence of said complexes as an indication of the presence of said BS106 antigen.

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27. The method of claim 26, wherein said antibody is attached to a solid phase.

10 28. A method for detecting the presence of antibodies specific for a BS106 antigen in a test sample suspected of containing such antibodies, said method comprising:

15 (a) contacting the test sample with a BS106 polypeptide, wherein said BS106 polypeptide contains at least one BS106 epitope derived from an amino acid sequence or fragment thereof having at least 50% identity to an amino acid sequence selected from the group consisting of SEQUENCE ID NO 16, SEQUENCE ID NO 17, SEQUENCE ID NO 18, SEQUENCE ID NO 19, SEQUENCE ID NO 20, and fragments thereof, and further wherein said contacting is carried out for a time and under conditions sufficient to allow antigen/antibody complexes to form; and

20 (b) detecting said complexes.

29. The method of claim 28, wherein said BS106 polypeptide is attached to a solid phase.

25 30. A cell transfected with a nucleic acid sequence encoding at least one BS106 epitope, wherein said nucleic acid sequence is selected from the group consisting of SEQUENCE ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE ID NO 5, and fragments or complements thereof.

30 31. A method for producing antibodies which specifically bind to BS106 antigen, comprising administering to an individual an isolated immunogenic polypeptide or fragment thereof in an amount sufficient to elicit an immune response, wherein said immunogenic polypeptide comprises at least one BS106 epitope and has at least 50% identity to a sequence selected from the group consisting of

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SEQUENCE ID NO 16, SEQUENCE ID NO 17, SEQUENCE ID NO 18,  
SEQUENCE ID NO 19, SEQUENCE ID NO 20, and fragments thereof.

5 32. A method for producing antibodies which specifically bind to BS106  
antigen, comprising administering to a mammal a plasmid comprising a sequence  
which encodes at least one BS106 epitope derived from a polypeptide having an  
amino acid sequence selected from the group consisting of SEQUENCE ID NO 16,  
SEQUENCE ID NO 17, SEQUENCE ID NO 18, SEQUENCE ID NO 19,  
SEQUENCE ID NO 20, and fragments thereof.

10  
15 33. A composition of matter comprising a BS106 polynucleotide or  
fragment thereof, wherein said polynucleotide has at least 50% identity to a  
polynucleotide selected from the group consisting of SEQUENCE ID NO 1,  
SEQUENCE ID NO 2, SEQUENCE ID NO 3, SEQUENCE ID NO 4, SEQUENCE  
ID NO 5, and fragments or complements thereof.

20 34. A composition of matter comprising a polypeptide containing at least  
one BS106 epitope, wherein said polypeptide has at least 50% identity to a sequence  
selected from the group consisting of SEQUENCE ID NO 16, SEQUENCE ID NO  
17, SEQUENCE ID NO 18, SEQUENCE ID NO 19, SEQUENCE ID NO 20, and  
fragments of SEQUENCE ID NOS 17-20.

25 35. The test kit of claim 10 further comprising a container with tools  
useful for collection of said sample, wherein the tools are selected from the group  
consisting of lancets, absorbent paper, cloth, swabs and cups.

30 36. The assay kit of claim 21 further comprising a container with tools  
useful for collection of said sample, wherein the tools are selected from the group  
consisting of lancets, absorbent paper, cloth, swabs and cups.

37. The test kit of claim 23 further comprising a container with tools  
useful for collection of said sample, wherein the tools are selected from the group  
consisting of lancets, absorbent paper, cloth, swabs and cups.

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38. A gene or fragment thereof which codes for a BS106 protein which comprises an amino acid sequence with at least 50% identity with SEQUENCE ID NO 16.

39. A gene or fragment thereof comprising DNA having at least 50% identity with SEQUENCE ID NO 4 or SEQUENCE ID NO 5.

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